

AMENDMENTS TO THE CLAIMS:

If entered, this listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A color imaging system for compensating a color response, the system comprising:
 - an array of pixel sensor elements;
 - a color filter including a plurality of color
 - 5 filter components organized in a predefined pattern, the color filter overlaying at least a portion of the array, wherein said pixel sensor elements include at least one element associated with a first color filter component, at least one element associated with a
 - 10 second color filter component, and at least one element associated with a third color filter component;
 - a first analog compensation unit coupled to the at least one element associated with the first color
 - 15 filter component, said first analog compensation unit adapted to modify a readout of the at least one

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element associated with the first color filter
component;

20 a second analog compensation unit coupled to the
 at least one element associated with the second
color filter component, and second analog compensation
unit adapted to modify a readout of the at least one
element associated with the second color filter
component;

25 an analog summing amplifier coupled to two
elements associated with the third color filter
component and outputting an analog sum of said two
elements;

30 a third analog compensation unit coupled to said
analog sum, said third analog compensation unit
adapted to modify a readout of said analog sum; and

 an array controller adapted to control the
readout of the elements associated with the first,
second and third color components wherein said array
35 controller directs said readout of said first,
second, and third color filter components in a
selected window of said array while other sections of
said array are not processed.

2. (Canceled)

3. (Original) The system of Claim 1, wherein at least a portion of the array elements arranged in a plurality of rows and columns.
4. (Original) The system of Claim 1, wherein the array controller is adapted to control the readout of a plurality of pixel sensor elements in parallel.
5. (Canceled)
6. (Original) The system of Claim 1, wherein the analog compensation units are gain amplifiers.
7. (Original) The system of Claim 1, wherein the analog compensation units are programmable gain amplifiers.
8. (Original) The system of Claim 7, wherein the programmable gain amplifiers are implemented as a separate stage.
9. (Original) The system of Claim 7, wherein the programmable gain amplifiers are contained within a pixel circuitry of the array.

10. (Original) The system of Claim 7, wherein the programmable gain amplifiers are within a plurality of column buffers.
11. (Canceled)
12. (Original) The system of Claim 1, wherein the color filter components include the colors of red, blue and green.
13. (Original) The system of Claim 1 wherein the array controller causes an independent readout for a set of even-numbered rows and an independent readout for a set of odd-numbered rows to control color compensation
5 or each color component.
14. (Original) The system of Claim 1, wherein the array controller causes an independent readout for even-numbered columns and an independent readout for odd-numbered columns to control color compensation of each
5 color component.

15. (Original) The system of Claim 1, wherein the array controller causes a plurality of substantially simultaneous, independent readouts for a plurality of rows and some columns.
16. (Original) The system of Claim 1, wherein the pixel sensor elements form a portion of a charged coupled device.
17. (Original) The system of Claim 1, wherein the pixel sensor elements form a portion of a complementary metal oxide semiconductor device.
18. (Original) The system of Claim 1, wherein at least a portion of the pixel sensor elements are active.
19. (Original) The system of Claim 1, wherein at least a portion of the pixel sensor elements are passive.
20. (Original) The system of Claim 1, wherein at least a first pixel sensor element is associated with a different color filter component than a second, neighboring pixel sensor element.

21. (Original) The system of Claim 1, wherein the predefined pattern is a Bayer color configuration.
22. (Original) The system of Claim 1, wherein the predefined pattern comprises the colors of yellow, cyan and magenta.
23. (Original) The system of Claim 1, further comprising a micro-lenses layer.
24. (Canceled)
25. (Canceled)
26. (Currently Amended) A method of compensating a color response in an analog domain of an array of pixel sensor elements, the method comprising:
 - amplifying an analog output from a plurality of elements of a first color component;
 - amplifying an analog output from a plurality of elements of a second color component wherein two said element outputs are summed together prior to said amplifying; and

generating a compensated analog readout of the plurality of elements of the first color component wherein only a selected window of said array is processed while other sections of said array are not processed.

27. (Canceled)

28. (Original) The method of Claim 26, wherein the act of generating a compensated analog readout comprises amplifying the analog readout for the plurality of elements of the first color component with a first
5 programmable gain amplifier.

29. (Original) The method of Claim 26, further comprising determining an optimal level of color compensation for the analog readout of the plurality of elements of the first color component.

30. (Original) The method of Claim 26, wherein generating a compensated analog readout depends on a temperature of the system.

31. (Original) The method of Claim 26, wherein the pixel sensor elements are associated with the colors of red, blue and green.

32. (Original) The method of Claim 31, wherein the array of pixel sensor elements is arranged in a plurality of rows and columns and the act of generating comprises:

generating an independent readout for even

5 numbered rows;

generating an independent readout for odd numbered rows;

generating an independent readout for even numbered columns; and

10 generating an independent readout for odd-numbered columns, such that at least one element associated with a red filter component is coupled to a first programmable gain amplifier, at least one element associated with a blue filter component is

15 coupled to a second programmable gain amplifier, and at least one element associated with a green filter component is coupled to a third programmable gain amplifier.

33. (Original) The method of Claim 26, wherein the act of generating comprises generating a plurality of substantially simultaneous, independent readouts for the set of rows and the set of columns.

34. (Canceled)

35. (Currently Amended) A color imager comprising:

a set of sensor elements, wherein at least one of said elements is associated with a first color, at least one of said elements is associated with a second

5 color, and at least two of said elements is associated with a third color;

a first amplifier configured to compensate for said first color;

10 a second amplifier configured to compensate for said second color;

an analog summing amplifier coupled to said two elements associated with said third color and outputting an analog sum of said two elements;

15 a third amplifier configured to compensate for said third color; and

an array controller which selectively couples

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elements associated with the first color to the first
amplifier, said array controller selectively couples
elements associated with the second color to the
20 second amplifier, and said array controller
selectively couples elements associated with the first
third color to the third amplifier wherein said array
controller directs said readout of said first, second,
and third color sensor elements in a selected window
25 of said array while other sections of said array
are not processed.

36. (Original) The color imager of Claim 35, wherein the
sensor elements are arranged in rows and columns.

37. (Canceled)

38. (Canceled)

39. (Currently Amended) A method of interpolating a color
value in the analog domain in realtime, comprising:
modifying a first analog signal corresponding to
the output of a first pixel element in an imager to

5 color correct the first pixel, the first pixel
element used to sense light intensity of a first
color; and

 modifying a second analog signal corresponding to
the output of a second and a third pixel element in
the imager to color correct the second and third

10 pixels, wherein the second and third pixel
elements are used to sense light intensity of a second
color and wherein said second analog signal is a sum
of said second and third pixel elements wherein only a
selected window of said imager is processed while
other regions of said imager are not processed.

40. (Original) The method as defined in Claim 39, further
comprising modifying a third analog signal
corresponding to the output of a third pixel element
in the imager to color correct the third pixel.